United States Department of Agriculture

Stillwater Interseeding Annual Ryegrass into Silage Corn

By Mark Doely, SCT, Columbus, MT 2019

County: Stillwater
Average annual precip: 13-14”
MLRA: 58AC, Sedimentry Plain Central
Dominant Soil Type: Attewan Loam, 0 to 4% slopes
Acres: 83
Planting Date, Corn: May 19, 2019
Seeding Rate, Corn: 38,000 seeds/acre
Planting Date, Annual Rye Grass: June 25, 2019
Ryegrass Seeding Rate: 29 lb/ac
Seeding Method: 3-point broadcast spreader
Corn Height at time of interseeding: 16”
Previous Crop and Year: Silage Corn
Herbicides: Pre: Roundup, prior to ryegrass seeding
Insecticides/Fungicides: None
Fertilizer: Nitrogen
Irrigation: Center Pivot
Corn Chopped: Sept 26, 2019
Earlage Chopped: Oct 16, 2019
Next Crop: Silage corn

Fig. 1. Corn on the date of annual ryegrass seeding, June 25, 2019.

Table 1. Monthly precipitation at Columbus, MT. Western Regional Climate Center, station #241938.

Columbus	J	F	M	A	M	J	J	A	S	O	N	D	Total
30 yr avg 1981-2010	0.61	0.67	1.08	1.85	2.69	2.27	1.18	.93	1.31	0.93	0.64	0.57	14.99
2018	0.85	1.51	0.65	2.48	5.82	2.56	1.15	1.25	0.77	0.88	0.69	0.43	19.04
2019	0.59	1.45	0.51	2.83	3.60	2.65	2.88	0.72	5.01	1.39	0.73	0.22	22.58

Introduction:

Interseeding annual ryegrass (*Lolium multiflorum*) into standing corn is becoming a common conservation practice in the midwestern Corn Belt. However, few trials have been conducted in Montana. The purpose of the practice is to provide additional ground cover and carbon to protect the soil from wind and water erosion the winter following corn harvest. Timing of the interseeding is important. If the ryegrass is seeded at the same time as the corn, it will decrease the corn yield through competition. If the ryegrass is seeded after the corn canopies, it will not have enough light to establish. Seeding ryegrass when corn is at the V3 to V5 stage is ideal as it allows both the corn and the ryegrass to establish. Selection of the cover crop species is important as it must be shade tolerant. Annual ryegrass, radish, and red clover are three cover crop species that can tolerate high shade. The cover crop is dormant after the corn canopies, and then is released for more growth after corn harvest when it has access to sunlight. See interseedingcovers.com for more information.

Results:

Annual ryegrass was broadcast into established silage corn on June 25, 2019 when the corn height was 16”. Ryegrass was starting to emerge on July 2. On July 8, it was noted that the ryegrass stand was thin in spots, possibly due to uneven coverage from the broadcast seeder. The expected throw diameter of the broadcast seeder was 39 feet. However, ryegrass is a very fine, light seed and it probably was not thrown as far as expected. On July 24, the corn was over 6 feet high and the ryegrass was just over 1 foot. Silage harvest began in late September when the corn was 10 feet tall and the ryegrass was just over 1 foot. Two clippings were taken on Oct 16 when part of the field was harvested for earlage. Estimated ryegrass production was 407 lbs/acre.

Fig. 2. Ryegrass at time of silage harvest, Sept 26, 2019.

Fig. 3. Ryegrass at time of earlage harvest, Oct 16, 2019.

Fig. 4. Earth worms at time of silage harvest, Sept 26, 2019.

Fig. 5. Chopping the earlage, Oct 16, 2019.

Summary and Discussion:

This field is in a continuous corn rotation and is used for fall and winter grazing. The ryegrass looked good when they were chopping in September but cold temperatures and wet conditions in early October stopped its growth. Approximately 80% of the field was cut before the weather changed and the rest of the field was cut for earlage. The silage corn averaged 30 ton/acre at 64% moisture which was well above his average for this field. The ryegrass did not have a negative effect on the corn yield. Overall the producer was happy with the results. We would have liked to see how much growth of the reygrass would have occurred if we would have had a warmer fall. The producer is looking at a better way of interseeding the ryegrass that will eliminate the blank areas in the field.

https://www.nrcs.usda.gov/wps/portal/nrcs/mt/soils/health/